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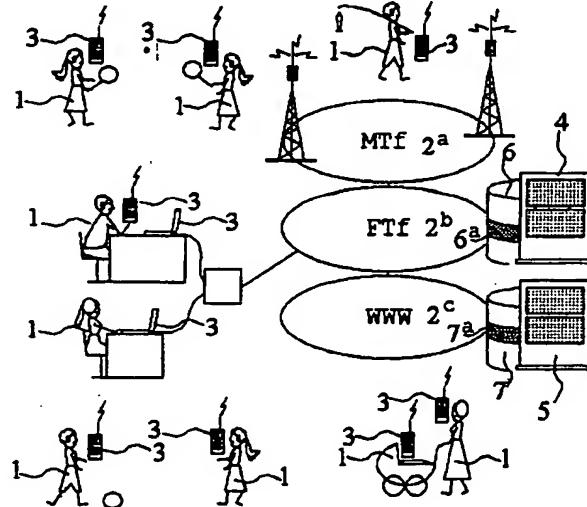
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[Continued on next page]

(54) Title: GROUP COMMUNICATION SYSTEM



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(57) Abstract: Communication system, comprising a network (2), terminals (3) and a system server (4). The system server comprises means for recording identifiers which are specific for a closed group of terminal users (1), such as a family, as well as means for, under specific conditions applicable for that group, connecting the terminals used by the group members to one another, to the system server or to a further server (5). The system server can comprise means for recording for each terminal one or more transmission/presentation codes which are specific for the transmission/presentation mode in which information received from other terminals or servers by the terminal is to be presented to the user. The terminals of the users belonging to the closed group comprise an organ (8, 9, 10) specifically for setting up a connection to one or more of the terminals used by the group members or to the system server or to the said further server.



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Group communication system**BACKGROUND OF THE INVENTION**

The invention relates to a communication system comprising a network, 5 terminals and a system server.

Such a communication system is generally known.

Present-day communication systems, in particular mobile communication systems, do not meet the needs of relatively small user groups, such as families, etc., to be able to communicate frequently, cheaply and 10 simply as a group. By a combination of simple terminals, a low usage charge and relatively frequent usage, a provider of such a service will nevertheless be able to generate sufficient revenue.

SUMMARY OF THE INVENTION

15 To meet this need, the invention proposes a communication system in which the system server comprises means for recording one or more identifiers which are specific for a closed group of terminal users formed from several members, as well as means for, under conditions which are specific for that group, connecting the terminals used by 20 the group members to one another, connecting the terminals used by the group members to the said system server or connecting these terminals to a further server. By recording identifiers of the group members, the system server can detect whether a terminal is being used by a user belonging to a particular user group. Referring to the 25 identifiers, the system server determines the group to which a terminal belongs and under which (group) conditions (technical or price conditions) a connection is being set up and maintained. The said further server is understood to be a server outside the actual system server, which can be used for facilitating services that are 30 not offered by the system server. The system server and the further server are considered as complementary servers for facilitating the services offered by the communication system according to the invention.

The system server can further comprise means for recording identifiers 35 which are specific for the various individual group members. On the basis of these user-specific or terminal-specific identifiers, the system server can, amongst other things, determine under which (technical) conditions the individual connections are set up and maintained and how the terminal output and terminal input is 40 controlled.

The network may be a public network (GSM, UMTS) or a private network. The system server or the said further server comprise means for offering facilities to the group members. These servers can for example comprise a database with information accessible to the group 45 members. The system server or the further server can also comprise conversion means for the conversion of - for example the

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- transmission/presentation mode (voice, text, image, video) - information exchanged by the group members. This latter preferably takes place on the basis of a transmission/presentation code, to which end the system server comprises means for recording for each terminal 5 one or more transmission/presentation codes which are specific for the transmission/presentation mode in which information received from other terminals or servers is to be presented to the user by the terminal.
- To enhance the simplicity of operation, the terminals preferably 10 comprise an organ specifically for setting up a connection to one or more of the terminals used by the group members, or for setting up a connection to the system server or to the said further server.
- The invention will now be further explained with reference to the figures.
- 15
- DESCRIPTION OF FIGURES**
- Figure 1 shows an example of a communication system according to the invention, comprising terminals 1, a network 2 (in this case formed by a mobile telephony network 2a, a fixed telephony network 2b and an IP 20 network (Internet) 2c), terminals 3 and a system server 4. The system server 4 comprises means, consisting of amongst other things a database 6, for recording one or more identifiers which are specific for a closed group of terminal users formed from several members. The identifiers can be the same (group) identifier for all users belonging 25 to the same group, which can be recognised as such by the system server 4 on the basis of group identifiers stored in the database 6. Another possibility is for each terminal to have a unique identifier and the database 6 to have tables for each user group of the terminal identifiers of the users belonging to the same group. The terminal 30 identifiers can also be partly formed by a terminal-specific part 1 and a group-specific part 1. On the basis of the terminal identifiers, the system server 4 can recognise if a terminal making contact with the system server belongs to a closed user group and, if so, to which group. Forming a closed user group within a (public) network 2 must 35 have advantages for the members of the group. In addition, this group facility must also be attractive for the network operator(s). An attractive aspect for the users may be the simplified setting up of a connection to the terminals of the group members. Furthermore, the operator may apply a lower charge for internal group use. For the 40 operator, being able to offer the group facility is a competitive advantage, while - on account of the user-friendliness and the lower charge - network traffic may be expected to increase.

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The system server 4 accordingly also comprises means for, subject to specific conditions applicable for the user group (lower charge, faster access), connecting the terminals used by the group members to one another, connecting the terminals used by the group members to the 5 said system server, or connecting these terminals to a further server 5. The servers 4 and 5 are assumed to be complementary in facilitating the user groups: the system server primarily facilitates the basic functions for group use, while the server 5 - which for example can be accessed via the Internet - can offer additional functions. The 10 distinction between basic functions and additional functions is not, incidentally, important and can change in the course of time, as technology advances.

The system server further comprises means for recording identifiers which are specific for the various individual group members. On the 15 basis of these terminal-specific identifiers, the system server 4 can detect for which type(s) of media or transmission the terminal is suitable: is it a "Multimedia laptop", a "Palmtop", a "Pager", a "WAP-enabled GSM", etc. The network 2 is formed by a public network, in this case represented by a public mobile telecommunications network 20 2a, a fixed telecommunications network 2b and the Internet 2c.

The system server 4 or the server 5 comprises means for offering to the group members (additional) facilities, such as information, whether or not exclusively accessible for the group members, stored in the database 6 or 7 of the servers 4 or 5, respectively.

25 The system server 4 or the server 5 comprises conversion means for converting information exchanged by the group members. This may be necessary if various sorts of terminals are used, such as mentioned above. In order to facilitate this conversion, the system server 4 comprises means for recording for each terminal one or more 30 transmission/presentation codes which are specific for the transmission/presentation mode in which information received from other terminals or servers is to be transferred or presented, i.e. the modes for which the "Multimedia laptop", "Palmtop", "Pager", "WAP-enabled GSM", etc. are suitable.

35 In order to greatly simplify communication within the group, the terminals are - as shown in figure 2 - provided with an organ in the form of a "shortcut" press-button 8, specifically for setting up a connection with one or more of the terminals used by the group members. By depressing this press-button 8, a connection can be made 40 with either one particular terminal (master terminal) or with all terminals (broadcast function). In the same way, other press-buttons 9 and 10 can set up direct connections to particular terminals or (parts

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of) the servers 4 or 5.

The communication system is intended particularly for families and other smaller user groups. The communication system can be used for synchronous, "real time" communication such as conventional telephony, and/or for asynchronous, "store & forward" forms of communication, such as e-mail (incl. "voice mail" etc.).

5 The system offers the family members the possibility of remaining in contact with the other family members the whole day via the server 4 with a "family domain", represented in the figure by database

10 "partitions" 6a and 7a. The family members can send simple, short multimedia messages to one another very quickly. The sender can determine which medium (voice, text, image, symbol, video or a combination) they want to use for their messages. Each family member uses their own communication device (terminal) 3, for example a

15 "buzzer", mobile telephone, "palmtop" (PDA) or "laptop". The servers 4 and/or 5 add, if relevant, information (localisation, reachability, address data etc.) to the messages. Messages can be shown on any (communication) device 3 with display; a family member's communication device, as well as, for example, a TV, PC or electronic bulletin

20 board. When receiving messages, there is no need to disturb the environment (such as happens with a telephone). The recipient sees the message appear on the display in the desired form (text, voice, image, symbol, video or combination), which can be adjusted by means of the transmission/presentation code. The server 4 thus converts the

25 received input (messages) into the desired output. The recipient can choose by means of the transmission/presentation code whether he wishes to receive a notification whenever a new message arrives.

The server 4 can store messages in the database 6 in order for them to be viewed (again) later. The servers 4 and 5 can also receive, store 30 and route other information, such as a shopping list and messages received from outside the family (voicemail, e-mail).

The concept is "familifiable", i.e. the concept can be adapted to suit the way in which the family wishes to keep in contact with one another. For example, parents can - via the settings of the 35 transmission/presentation code - keep control over the use made of the system by the children, by setting limits to phone costs and the times at which the system can be used.

Features of the servers 4 or 5:

1. For each message, the transmission time and the location of the

40 transmitter can be shown to the recipient. In addition, the sender can, if desired, indicate whether the recipient is expected to reply within a particular period.

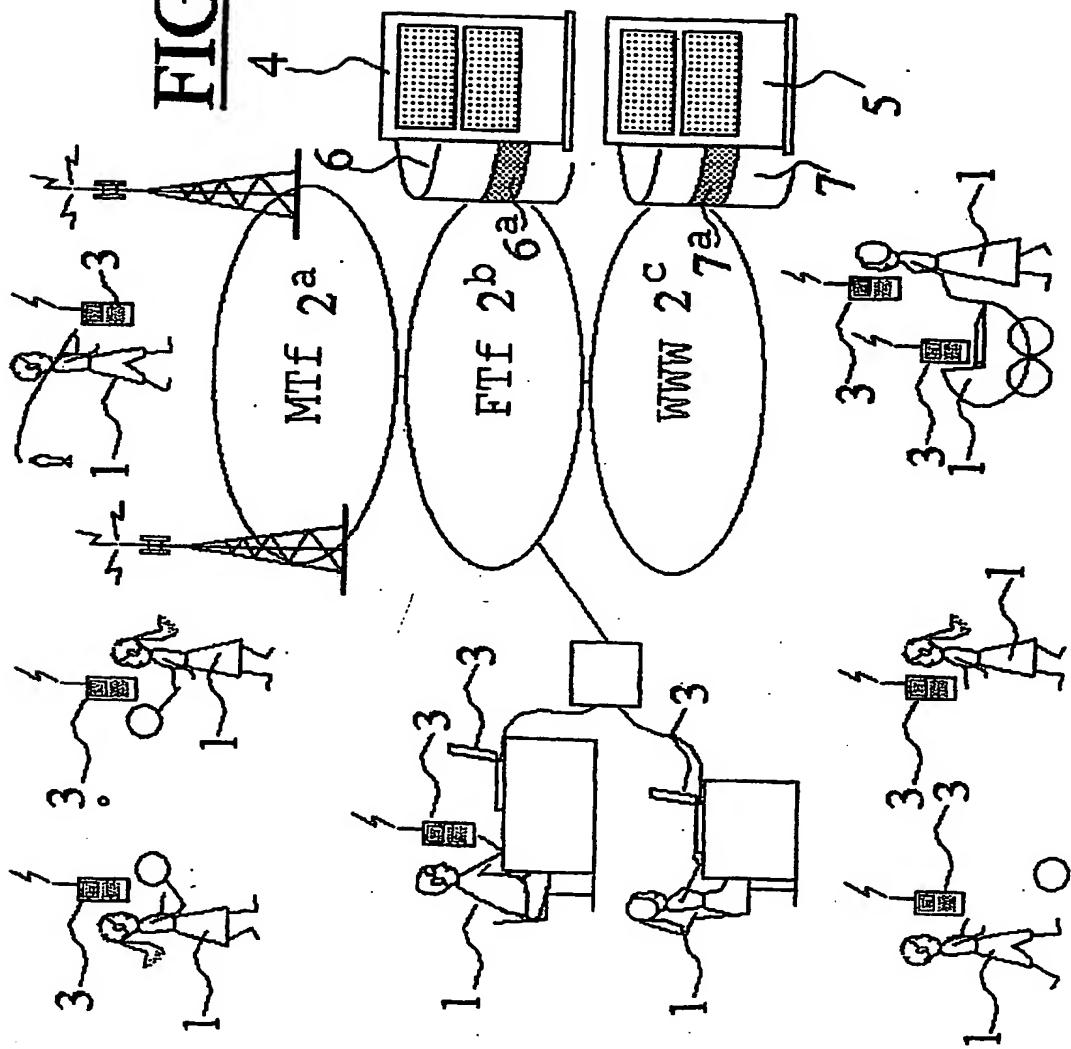
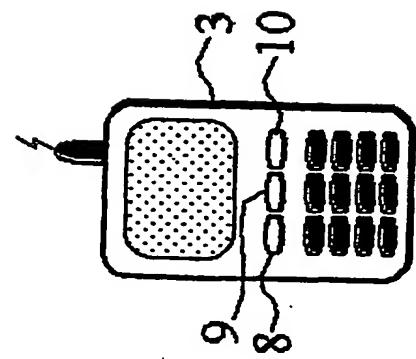
-5-

2. It is possible to pre-program a number of standard replies such as for example, "yes/no" or "OK" or "I've arrived", "how are you?", etc. A sound is defined for each standard reply so that the reply can be heard without it being voice (just like the sounds made by the PC).
- 5 3. Household kitty: parents can raise children's calling credit. This has the advantage that the child is rewarded by being enabled to telephone more.
4. Send an Internet link or a telephone connection. This makes it possible to divert network users outside the group.
- 10 5. Selective reachability: Via the server 4, each family member can set their reachability by setting the transmission/presentation code. This means that someone wishing to send a message can check the reachability state of the other person and, based on this knowledge, can decide whether to send a text or voice message. An emergency signal sent by a child, for example, will always reach the parent(s).
- 15 6. An archive, stored in the database 6 or 7, is used for sorting messages and checking back (e.g. "What time was our appointment exactly?"). This could also serve for storing the shopping list, for example.
- 20 7. A household calendar, stored in the database 6 or 7; this could show the activities of the family members. For example, on Monday Pieter has football at 18:00. The calendar can also be used to store a reminder of, for example, an imminent birthday.

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CLAIMS

1. Communication system, comprising a network (2), terminals (3) and a system server (4), CHARACTERISED IN THAT the system server comprises means for recording one or more identifiers which are specific for a closed group of terminal users (1) formed from several members, as well as means for, under conditions which are specific for that group, connecting the terminals used by the group members to one another, connecting the terminals used by the group members to the said system server, or connecting these terminals to a further server (5).
- 10 2. Communication system according to claim 1, CHARACTERISED IN THAT the system server further comprises means for recording identifiers which are specific for the various individual group members.
3. Communication system according to claim 1, CHARACTERISED IN THAT the network is a public network.
- 15 4. Communication system according to claim 1, CHARACTERISED IN THAT the system server or the said further server comprises means for offering facilities to the group members.
5. Communication system according to claim 3, characterised in that the system server or the said further server comprises a database (6,7) with information accessible to the group members.
- 20 6. Communication system according to claim 3, characterised in that the system server or the said further server comprises conversion means for converting information exchanged by the group members.
7. Communication system according to claim 6, CHARACTERISED IN THAT the system server comprises means for recording, for each terminal belonging to the user group, one or more transmission/presentation codes which are specific for the transmission/presentation mode in which information received from other terminals or servers is to be presented to the user by the terminal.
- 25 30 8. Communication system according to claim 1, CHARACTERISED IN THAT the terminals of the users belonging to the closed group comprise an organ (8) specifically for setting up a connection to one or more of the terminals used by the group members.
9. Communication system according to claim 1, CHARACTERISED IN THAT the terminals of the users belonging to the closed group comprise an organ (9) specifically for setting up a connection to the system server.
- 35 10. Communication system according to claim 1, CHARACTERISED IN THAT the terminals of the users belonging to the closed group comprise an organ (10) specifically for setting up a connection with the said further server.

FIG. 1FIG. 2

INTERNATIONAL SEARCH REPORT

Interr. Application No.

PCT/EP 01/09022

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 H04M3/38 H04Q7/38

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 H04M H04Q

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ, INSPEC, IBM-TDB, COMPENDEX

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 00 30374 A (HAARAMO VILLE ;KORHONEN PANU (FI); WIKBERG HARRI (FI); FRAEKI JOHA) 25 May 2000 (2000-05-25) abstract page 2, line 20 -page 5, line 15 page 9, line 7 - line 25 page 10, line 15 - line 30	1,3,4, 8-10
A	US 5 349 629 A (KUMANO TOSHIYA) 20 September 1994 (1994-09-20) abstract column 1, line 19 -column 2, line 14	8

 Further documents are listed in the continuation of box C. Patent family members are listed in annex.

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INTERNATIONAL SEARCH REPORT

Information on patent family members

Inten Application No.

PCT/EP 01/09022

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